A Survey of Knowledge Level about Pediatric oral/dental Health among Pediatricians

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Abstract

Pediatricians play a central role in children's health care and are the first line of care for oral/dental conditions. The level of pediatrician knowledge about oral/dental health is not accurately determined. In this cross-sectional study, a previously adapted questionnaire was used to evaluate the level of oral/dental health knowledge among pediatricians affiliated with medical universities in Tehran, Iran. The data were summarized through descriptive statistics and central index tests. In this study, 263 pediatricians (49.4% male) completed the questionnaire. The mean age was 43.9 years. Only 17 individuals (6.5%) had completed a course of oral/dental health during their residency. The mean score was 5.9 ± 1.7. Questionnaire scores were similar between male and female pediatricians. Time from graduation and completion of an oral/dental health course was not associated with better performance according to the questionnaire. The level of knowledge about oral/dental health among pediatricians is inadequate. Most pediatricians have not completed a training course on this matter. These findings highlight the need for integrated training programs to improve pediatrician knowledge about oral/dental health.

Keywords: *Knowledge Level, Pediatric oral/dental Health, Pediatricians, Medical Universities.*

Introduction

Oral/dental diseases such as dental carries and periodontal conditions are among the most common chronic conditions in children, which begin during the first few years of life and could be best avoided in infancy and childhood [(1)]. Negligence of such disorders could lead to dental and gingival complications, tooth loss, distorted self-image, and decreased quality of life [(2)]. Prevention is considered as the most effective method to avoid such complications and to improve oral health. The increasing prevalence of dental carries and gingivitis among children in developing countries makes them important subjects in health-care policy [(3,4)]. Children are an important target for oral health preventive interventions; hence, providing consistent measures of prevention and education in this age group is of paramount importance [(5,6)].

Pediatricians are the first-line in children's health-care, meaning their familiarity with oral/dental health subjects in providing evidence-based care and education to families can promote prevention of oral/dental diseases [(7)]. A few studies in this field have demonstrated inadequate levels of oral/dental health training among pediatricians [(8)]. Previous studies were conducted among Iranian medical interns and pediatric residents, which revealed substandard oral/dental knowledge level among these groups [(9,10)]. There is limited evidence concerning the sufficiency of pediatricians' oral/dental knowledge. In the present study, we sought to determine the level of oral/dental health knowledge among pediatricians in Tehran.

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Material and Methods

Study design and participants: In this cross-

sectional descriptive study, between 2018 and 2019, a group of pediatricians who practiced in Tehran and other Iran city were asked to complete a questionnaire regarding oral and dental hygiene among children. Participant selection was done through convenience sampling.

The questionnaire: The questionnaire used in this work was adopted from previous studies, previously conducted pilot surveys, and was approved by dentistry professors in all universities involved [9,10]. There were four initial questions about the participant's age, sex, the number of years passed since their pediatrics residency program graduation, and whether they have taken part in any specific course on oral/dental hygiene during their residency. These were followed by 15 multiple-choice questions covering pediatric oral and dental hygiene, tooth-brushing, routine dentistry evaluations, fluoride use, and tooth development. Each question was assigned a score of 1 if the provided answer was correct, and 0 in case of an incorrect answer. The performance of each individual was evaluated according to the sum of the scores and was designated as "weak" for a score of 1-5, "moderate" for 6-10, and "good" for 11-15.

Data analysis: Sex and participation in an oral / dental course are demonstrated as number (percentage). Age, years since graduation, and questionnaire scores are demonstrated as mean ± standard deviation. Comparison of categorical and continuous variables was made between males and females using Chi-Squared test and independent samples T test, respectively. An association between two continuous variables was tested by Pearson correlation.

Findings

Overall, 263 participants who completed the questionnaire were included in the study. Among the participants, 130 (49.4%) were males, and the mean age was 43.9 ± 7.3 years. The mean time from residency graduation was 8.2 ± 4.1 years and 17 individuals (6.5%) stated that they had completed a course of oral/dental hygiene during their residency.

The mean score was 5.9 ± 1.7 among the studied population. Frequency of correct responses are demonstrated in Table 1 and visualized. The minimum score was 1 and the maximum score was 11. The classification of pediatricians according to questionnaire scores are shown in Table 2.

Table 1. Frequency of correct answers provided to each question by pediatricians.

Question	Correct answer
1	151 (57.4%)
2	93 (35.4%)
3	35 (13.3%)
4	54 (20.5%)
5	216 (82.1%)
6	69 (26.2%)
7	159 (60.5%)
8	59 (22.4%)
9	115 (43.7%)
10	112 (42.6%)
11	88 (33.5%)
12	84 (31.9%)
13	172 (65.4%)
14	98 (37.3%)
15	34 (12.9%)

Data are presented as number (percentage)

Table 2. Classification of the oral/dental knowledge of pediatricians according to the questionnaire score.

Score	Number (percentage)
Weak	112 (42.6%)
Moderate	149 (56.7%)
good	2 (0.8%)

Questionnaire scores were not different between male and female pediatricians (5.7 in males versus 6.0 in females; p = 0.19). Older pediatricians had higher scores but the association of time from graduation with oral/dental hygiene knowledge nearly missed significancy (p = 0.051). The scores were similar between those who had completed a course on oral/dental hygiene during their residency and those who had not. (p = 0.168)

Discussion

According to these results, the level of pediatricians' knowledge about oral/dental health is far from sufficient. Furthermore, only a small fraction of pediatricians reported participation in a course on oral/dental hygiene during their training. Gender and time of graduation had no significant association with the questionnaire score. Importantly, pediatricians are generally the first-line in the care of children who may have oral/dental conditions. Pediatricians are the physicians who refer children to dentists and lack of knowledge and confidence to perform a directed oral/dental exam can lead to under-appreciation of such conditions in the pediatrics practice [(11)].

A previous study of medical interns in Tehran with the same questionnaire showed that oral/dental health knowledge is inadequate among trainees and concluded that new training programs should be incorporated in the medical curriculum to address this issue. The mean score of participants was 4.87 and age, sex, and duration of training did not show any association with the score [(9)]. Another study with a similar questionnaire was conducted among pediatrics residents of Tehran which demonstrated an insufficient level of oral/dental health knowledge in residents. Moreover, none of the participating pediatric residents had been through a course focusing on oral/dental health. The mean score 6.43 and only 27.3% had a high enough score to be considered as good dental knowledge [(10)].

Various reports from other studies point to the suboptimal attention towards oral/dental health of children. In a Canadian study, the authors reported that only 1.8% of pediatricians could answer all the oral health-related questions correctly, and 73.9% of them reported regularly inspecting patients' teeth. The study concluded that lack of appropriate knowledge impedes high-quality dental care for children [(12)]. A study form Belgium reported that pediatricians' knowledge about oral health was insufficient and highlighted the need to improve this knowledge among physicians involved in preventive care of children. In this study, 71% of pediatricians reported to have taken part in some sort of training course for oral/dental health, and most relied on information brochures [(13)].

Herndon et al. studied the level of oral health knowledge in pediatricians and general practitioner and concluded that pediatricians performed better in this regard; however, both groups had suboptimal knowledge and improvement was needed. They found no direct association between training for oral/dental disease prevention and performing the recommended practices. Nevertheless, training was associated with increased confidence relating to dental issues [(14)]. A study from India reported that while 58% of general dental practitioners were aware of early childhood caries, only 2% of medical practitioners had knowledge about this condition. Among medical professionals, older age was associated with better dental health knowledge [(15)].

In a study from Shiraz, the knowledge, attitude, and practice regarding dental health was assessed among general practitioners and pediatricians. A self-completed questionnaire was used for this study. There was not a significant difference between general practitioners and pediatricians in knowledge, attitude, and practice. Physicians with higher working hours, and those who worked in government-administered centers with high workloads demonstrated a higher level of knowledge and better practice. On the other hand, there was no

association between the time passed from graduation and their performance [16]. These data point out that overall, pediatrician knowledge about oral/dental conditions can be improved, which could in turn lead to more focused prevention strategies with reduction in the burden of pediatric and adult oral/dental diseases and conditions. Such improvement in pediatrician knowledge is specifically important in the developing countries. It should be noted that our findings are limited by the small sample size, which was due the reluctance of specialists to complete the questionnaire.

Conclusion

According to the present study, the level of pediatricians' knowledge about oral/dental health in children is far from appropriate. Most pediatricians in this study did not receive any oral/dental health training during their residency. Due to their central role in children's care and the importance of oral/dental conditions in this age group, providing focused training in this subject for pediatricians seems necessary.

Ethical Clearance: Obtained from institutional ethical committee

Source of Funding: Self

Conflict of Interest: Nil

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